Rural RPPs: Going from The Middle of Nowhere to Getting Somewhere

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***Abstract*— We have an RPP grant, but do we have a Research Practitioner Partnership? We have found ourselves asking that question over the past year as we have struggled to accomplish project goals and objectives. In this paper, we aim to help others learn from our experience the importance of understanding the difference in working with an RPP under construction and an RPP fully formed, share a summary of our story, and offer some advice based on our situation and plans moving forward.**

***Keywords*— RPP, partnerships, barriers, communication, rural**

I. Introduction

Beginning in the fall of 2016, the Mississippi Department of Education (MDE), in partnership with the Mississippi State University (MSU) Research and Curriculum Unit (RCU), launched a computer science content pilot called Computer Science for Mississippi (CS4MS). The call to participate has been extended each succeeding year to every district in the state and has expanded to include computer science (CS) content and courses from kindergarten through high school. These courses and teacher trainings have been offered to districts at no cost and included travel reimbursement and continuing education credits for teachers. Any teacher holding a valid license in Mississippi has been offered the training, and no special CS endorsements have been required. In Figure 1, the districts participating in the CS4MS pilot are marked in blue and non-participating districts in gray. As Figure 1 shows, there is a gap in participation among the schools in the Delta region of the state. Districts in the yellow highlighted area are not only rural, but also serve some of the poorest of Mississippi's population. Our project, ***Collaborative Research: Identifying Participation Barriers to Computer Science Education in Rural Mississippi***, focuses on this area. The major goal of this project is to form a research practitioner partnership (RPP) which investigates issues and perceptions that may exist as barriers to CS education. However, simply pulling together a team of practitioners does not automatically form an RPP.

II. Problems of (our) Practices

A. Team Selection Errors

The first stated goal of the project is to form an RPP. Our method to accomplish this was to ask each district contact to strategically select participants from various roles (administrator, counselor, teacher) in order to give us a diversity of voices on the team. We knew we would need to provide some information as to why CS was important, why we were forming this group, what we hoped to accomplish, and how we wanted to work together. As researchers, sitting around the table at the university planning our first meeting agenda, we thought we had the perfect plan to, in just 4 hours, educate and excite this group of people to champion our ideas back in their own districts.

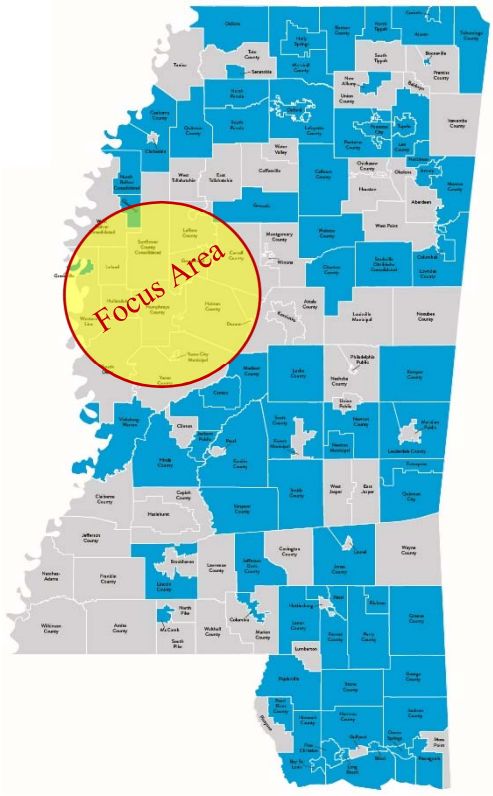

Fig. 1: Map of CS4MS Pilot Districts

B. Project Recruitment Errors

To illustrate where this began to go wrong, we need to share our strategy for getting districts to agree to participate in the project initially. We sent emails to the superintendents with the

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subject line "Mississippi State University Grant Partnership." We explained in the email that we would like to partner with the districts under a National Science Foundation funding opportunity to investigate the barriers to CS education in their geographic area. When we got no response to emails, we followed up with phone calls. When we finally got through to someone it was often not the superintendent, but someone willing to listen and present the project to the superintendent on our behalf. We believe what was communicated or heard was "National Science Foundation," "funding," "free local professional development" and "free activities for students." This was sufficient to gain the coveted signed letter of commitment for proposal submission, and we blissfully proceeded under the impression that the superintendent had been properly briefed, would remember our important project between submission and actual funding time, and would gather the best people in the district to participate on our team.

C. *Team Communication Errors*

What follows is the reality we faced. When we received news that we had been awarded the project, we began to reach out to districts to identify RPP team members. We had to explain the project again because no one recalled the initial conversations; then, we had to repeatedly follow up (almost to the point of harassment) to get the names and email addresses of the district-selected individuals. When we began contacting the individuals, we found many of them had no idea about the project. Their name had simply been submitted by their administrator and no information had been given to them.

We also quickly found out that districts were not eager to allow people to leave campus for an entire day four times during the year to participate in this project. Therefore, we scaled back our face-to-face meeting requirements to two ½ day meetings with online meetings scheduled in between. We set the date for our first face-to-face meeting and began excitedly preparing binders for each participant containing a copy of the winning proposal, documents explaining the concept of an RPP, and blank calendar pages for next two years.

D. *Team Meeting Errors*

The November afternoon of our first RPP meeting arrived and our participants entered the room immediately eyeing the cookie tray and coffee table while flipping through the three-inch binder with deer-in-headlights looks. After introductions, we jumped right in, asking them to share their perceptions of CS while we made posters on the wall with their thoughts. We eagerly walked them through a "Purpose to Practice" activity[1] complete with colorful worksheet as a team-building exercise, feeling quite proud that we fit (forced) this RPP-building tool into our packed agenda. We took a short break and then started talking about the many activities we would need to conduct in their districts to begin exploring the initial research questions around barriers.

This is where the first hints of "we do not have the right people in the room" began to surface. First, we realized based on the sign-in sheet that while the districts selected participants in various roles, the actual attendees turned out to be primarily classroom teachers. Second, participants did not feel qualified or at liberty to plan or schedule events outside their immediate area of responsibility. For example, we talked about conducting a survey of all 4th graders in a district; however, there were no district-level representatives present, and the school-level participants were high school teachers who felt they did not have connections to the elementary school and were not sure how to make that happen.

Another similar issue arose when we talked about focus groups in a specific school which had no representation on the team. Even though there was a district-level person present, they did not feel at liberty to approve that activity or seem to know how to contact the school principal to get permission and discuss dates. We left that day feeling like the people present were interested in what they learned, voiced understanding and agreement with the need for CS education but were not exactly sure how they could really help.

We held a follow-up online meeting in January with the purpose of reviewing the IRB requirements of working with students through surveys and focus groups in preparation for getting those activities scheduled. Due to the very low attendance, five people out of 32, we resorted to individual calls with schools in each district, explaining the process multiple times, and never actually talking to the teacher who would facilitate the distribution and collection of permission forms and administer the online survey. We held our second face-to-face meeting in February with thirteen, less than half, in attendance and no representative at all from one entire district. Again, we struggled with having the right people in the room with the authority and/or knowledge of how to get permission to conduct activities in schools other than their own.

Ultimately, we were only able to survey 144 students (out of approximately 6,000 planned) across five districts; conduct focus groups with administrators, counselors, teachers, students, and parents in four districts; and provide coding activities in three schools within only one district.

III. What Have We Learned?

A. *Form the team based on the actions/outcomes needed.*

Ultimately, the biggest lesson we have learned is that we did not begin the project with an RPP. We began with a group of people who were pulled together based on inadequate information, "voluntold" participation, and no shared interests in the project goals. The blame for this falls squarely on us as the project initiators and our own lack of understanding of what an RPP really is and how it functions. Penuel and Gallagher explain in their book titled *Creating Research-Practice Partnerships in Education* that what we developed in the beginning was "researchers seeking schools and districts as sites for studies" [1]. Our research goals were driving the arrangement. We came in with a thorough background and understanding of why this project was needed, along with a set of activities planned to gather the data we needed. Our practitioners came in with little to no understanding of the project, its background, or what was expected of them.

1 http://www.liberatingstructures.com/33-purpose-to-practice-p2p/

When we were first considering who should be a part of our RPP (what roles within a district we wanted represented), we thought about it from the standpoint of getting different viewpoints on the research questions proposed in our project description. We were thinking of the RPP as a participant in the research, not as a partner. We needed to ask what roles within a district could best help with the work of the project and not who could inform the work. We needed practitioners who could schedule and facilitate the necessary activities within the district that would help us gather data to answer our research questions.

If you are going to ask the school district to select team members, be precise about whom they should select for the project by providing a list of expectations for team members; explain what type of activities they will need to facilitate within the district and what level of authority they need to have to adequately contribute to the team. Question district selections that appear to be the convenient choice rather than the best choice; selections should be made based on the individual's authority, ability, and interest in doing the work.

B. *Understand where you are in team/RPP development.*

We would have yielded better outcomes in year one if we had not tried to force the working concepts of an RPP on our newly formed group. If we had simply thought of the initial team as a taskforce, we could have accomplished more activities and collected additional data to start year two. Instead, we are starting over and building a new team to complete the activities of this final year. We will move forward, clearly defining what each participant is expected to do to help gather the needed data through the planned activities. Afterwards, we will ask them to assist us in analyzing the data to identify barriers and understand perceptions of CS education. This active participation in data gathering and analysis will help lead the group in developing solutions and activities to address what the data reveals, better positioning each team to begin CS education implementation planning for their districts.

C. *Invest in the time up front to educate and prepare potential partners.*

If you start your project by asking for a list of names, realize you probably do not have an RPP yet, but you are building champions from the ground up. Spend time cultivating them.

As we reflect on year one, what we needed was more time spent on building relationships up front. A fully functioning RPP takes *time*: time to build, time to develop trust, time to accomplish work, time to produce results. It is difficult to build trusting, mutualistic relationships in two four-hour meetings among people who, on a daily basis, have a different set of responsibilities.

As we begin year two, we are traveling to each district to meet with the superintendent or highest district-level contact possible to explain the project and its background, discuss what activities are required to gather the appropriate data, ask who would be the best people in the district to help accomplish those goals, and then be at liberty to begin developing a CS implementation plan. We are working to create a CS champion at the top within each district. These face-to-face meetings at the beginning (even before funding, if possible) are critical to the efficiency, health, and success of the project.

Because the team representing each district is comprised of participants from different roles and physical locations, we are also working individually with each district team this year to help them build a sense of community, be aware of their role within the team, and understand the purpose of the project as it relates specifically to their school or district. We realized during year one that we actually have teams within the team (or mini-RPPs at each district) and believe that it is important for those smaller groups to feel connected in order to accomplish the tasks of the project and allow them to better represent their district within the larger, five-group RPP. Ultimately, this will help create a stronger RPP to address future issues around CS education in that area of our state.

IV. New Strategies

As we have shared these struggles with others in the CS education space, someone recommended we frame the problems by considering the assessment indicators given in *Assessing Research-Practice Partnerships: Five Dimensions of Effectiveness* [2] by Hendrick and others. As stated in their work, these five dimensions are:

- Dimension One: Building trust and cultivating partnership relationships.
- Dimension Two: Conducting rigorous research to inform action.
- Dimension Three: Supporting the partner practice organization in achieving its goals.
- Dimension Four: Producing knowledge that can inform educational improvement efforts more broadly.
- Dimension Five: Building the capacity of participating researchers, practitioners, practice organizations, and research organizations to engage in partnership work.

A. *Dimension One.*

While it continues to be challenging to develop strong interpersonal relationships with colleagues several hours away and with whom we only interact around the work of this project, we have seen progress in Dimension One through meeting with each district individually both face-to-face and through online sessions. These meetings have helped us to connect with the practitioners in a more personal and relative way, as we learn about the numerous other responsibilities placed on them and limitations they face within their working environment. We have been able to express an understanding of their enormous workload while communicating the importance their knowledge and participation has in the success of this project. This has increased the participants' sense of commitment to the work and led to their feeling more valued and appreciated in their efforts to add to their heavy workload.

B. *Dimensions Two.*

As this small-strand project is primarily a time of building relationships and understanding problems of practice, we have not done much in the way of rigorous research as referenced in

Dimension Two. Our primary research efforts have centered around conducting online surveys and in-person focus groups with various district populations, including students, administrators, counselors, teachers, and parents. The RPP members have been an integral part in getting these data collection activities set up. They have become more involved in the process as they have had to complete online training to safely work with human subjects as required by our Institutional Review Board. Based on feedback from the RPP, we have adjusted our data collection methods across the five participating districts so that we can at least identify responses by district. This way each district can have a better understanding of barriers specific to their area while also understanding where they are in the larger study population.

C. Dimension Three and Four.

These meetings have also helped with Dimensions Three and Four, as we have gained a better understanding of each district's goals for general educational improvement and for increasing CS education specifically. We have been able to create a more customized picture of how CS education can help each individual district meet their overall educational goals, which generally gets them more excited about potential outcomes and more committed to the process and activities.

D. Dimension Five.

As we continue to work together on this project and plan for a larger study, we will see an increased capacity for all RPP members to engage in partnership work, as described in Dimension Five. As researchers, we are already seeing the need to view the districts as partners to investigate with and not simply as locations to study. We are seeing the practitioners recognize that we can assist them in understanding more about their students and problems of practice by working together and that the evidence produced through this work can inform and influence the district's educational goals.

V. Conclusion

As we move into year two of our project, we continue to seek answers to research questions surrounding barriers to CS education in rural Mississippi, but we now understand that we are building an RPP prepared to implement solutions to overcome those barriers and to anticipate future problems of practice that impact broadening participation. We plan to work with this group to write a medium-sized NSF CS4All proposal to submit in the spring. Through the data gathered during this current project, we believe we can develop shared goals, respecting the priorities of each district and making a long-term commitment to work together to identify problems of practice around the implementation of CS education in a way that overcomes the identified barriers, causing a shift in perceptions of CS.

Acknowledgment

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[2] E. Henrick, P. Cobb, W. Penuel, K. Jackson, and T. Clark, "Assessing research-practice partnerships: five dimensions of effectivemenss," New York: William T. Grant Foundation, 2017.